

IMPROVED DIGITAL CAMERA DEVICE AND METHODOLOGY FOR WIRELESS
PROGRESSIVE TRANSMISSION OF DIGITAL IMAGES

ABSTRACT OF THE DISCLOSURE

A digital imaging system is described that provides techniques for reducing the amount of processing power required by a given digital camera device and for reducing the bandwidth required for transmitting image information to a target platform. The system defers and/or distributes the processing between the digital imager (i.e., digital camera itself) and the target platform that the digital imager will ultimately be connected to. The system only performs a partial computation at the digital imager device and completes the computation somewhere else, such as at a target computing device (e.g., desktop computer) where time and size are not an issue (relative to the imager). The system also incorporates a progressive transmission methodology allowing a user to capture a moment at a high level of quality/resolution, yet transmit a version of that image in a manner that is adapted for the communication bandwidth or medium currently available. The device implements a methodology (and supporting progressive file format) that records a moment (picture) in its full digital quality/resolution (desired by the user) but then prioritizes the image information into a variety of layers or compartments. Using this partitioning of image information, the system can optimize transmission, choosing how much or how little image information is actually transmitted to a target destination at a given point in time, based on the then-existing communication medium (or other constraints) present. The user may elect to collaborate or synchronize the differences between the image information captured (i.e., full N number of compartments) with the image information transmitted to a target destination (e.g., first layer only), at the user's convenience, so that the transmitted image may be upgraded to its final, full quality/resolution representation.